reduction) CAD: 37 had single, 19 double and 24 triple vessel disease. Sensitivity for detection of CAD was 78% for ECHO and 84% for MIBI (p = ns). Specificity was 77% for ECHO and 91% for MIBI (p = ns). Overall accuracy was 78% for ECHO and 85% for MIBI (p = ns). Intercenter variation in accuracy ranged from 50% to 100% for ECHO (variation coefficient = 19.7) and from 79% to 100% for MIBI (variation coefficient = 8.2). Angiographically assessed extent and severity of CAD evaluated by the Duke score was correlated to the extent and severity of both perfusion defects (each segment scored from 0 = normal to 3 = absent tracer uptake) with MIBI ($r = 0.55$, $p < 0.01$) and functional impairment (each segment scored from 0 = normal to 3 = dyskinetic) by ECHO ($r = 0.50$, $p < 0.01$). In conclusion, MIBI and ECHO have comparable accuracy for noninvasive identification of angiographically assessed CAD during high dose dipyridamole stress. Intercenter variability in diagnostic accuracy is higher for ECHO than MIBI. Both methods allow a reasonably accurate estimation of extent and severity of CAD through a semiquantitative assessment of extent and severity of perfusion or functional defects.

1050-158 Comparison Between Tl-201 and Tc-99m-NOET Myocardial Uptake During Adenosine Hyperemia in Dogs with Mild to Moderate Coronary Stenoses

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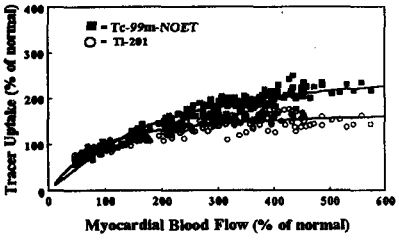
We have previously demonstrated that the myocardial uptake of Tl-201 (Tl) more accurately tracks coronary flow during adenosine (Ado) hyperemia than either Tc-99m-sestamibi or tetrofosmin. NOET is a new Tc-99m-labeled myocardial perfusion tracer which redistributes similar to Tl. We compared Tl and NOET uptake in 9 dogs with either critical (n = 4) or mild (n = 5) LAD stenoses after simultaneous injection with microspheres during Ado infusion (300 μg/kg/min). As shown, 5 min after injection, NOET uptake by gamma well counting was higher than Tl over a wide range of flow. Although both Tl and NOET uptake underestimated the magnitude of flow disparity, NOET more closely matched flow. The mean flow and tracer activity ratios (LAD/LCX) were:

Group	Flow	Tl	NOET	
Critical	0.14 ± 0.02	0.51 ± 0.05*	0.34 ± 0.03*†	*p < 0.01 vs Flow
Mild	0.53 ± 0.09	0.78 ± 0.07*	0.71 ± 0.07*†	†p < 0.05 vs Tl



Thus, NOET appears to be the first Tc-99m-labeled myocardial perfusion tracer with myocardial retention higher than Tl after 5 min. This finding, combined with its redistribution property, suggest that NOET may be well suited for pharmacologic stress imaging.

1050-159 Myocardial Blood Flow Vs Tracer Uptake Characteristics of Perfusion Tracers During Dobutamine Stress

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The relationship between tracer uptake and myocardial blood flow (MBF) for multiple Tc-99m labeled perfusion tracers has not been previously reported using dobutamine, which is used to simulate exercise. Therefore, in an open chest canine model of ischemia (18 dogs), during dobutamine infusion, the relationship between myocardial tracer uptake and MBF was characterized for six tracers (Tl-201, Tc99m-Q3, Tc99m-Q12, Tc99m-Q4, Tc99m-tetrofosmin (Tetro), Tc99m-sestamibi (MIBI)).

Dobutamine effect was verified by a statistically significant increase in dP/dt and coronary flow, with no difference among tracer groups. The data were combined after normalizing to the average tracer activity and MBF for each dog. The relation between tracer uptake (% average) vs. MBF (% average) was analyzed by linear regression. The number of samples (n), correlation coefficient (r), line slope, and y intercept are presented in the following table:

	TL-201	Q3	Q4	Q12	Tetro	MIBI
n	266	201	268	266	268	201
r	0.94	0.97	0.91	0.95	0.90	0.92
Slope	0.84*	0.77^	0.62*^	0.61*^	0.72*^	0.60*^
Intercept	0.16*	0.23^	0.39*^	0.39*^	0.32*^	0.40*^

*p < 0.01 compared to Q3; ^p < 0.01 compared to Tl-201 by ANOVA.

In conclusion, the flow vs. uptake characteristics of Tc99m-Q3 and Tl-201 during dobutamine infusion are superior to the remaining tracers.

1050-160 Detection of Mild and Severe Coronary Artery Stenoses by Dipyridamole ^{201}Thallium vs Dipyridamole ^{99m}Tc-Tetrofosmin

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Animal experiments have shown ^{99m}Tc-Tetrofosmin (Tetro) to reach a plateau of myocardial extraction with increasing coronary blood flow rates at an earlier stage than ^{201}Thallium (Th). Therefore, the detection of mild coronary artery stenoses might be superior with Dipyridamole (DP) Th than DP-Tetro. We conducted a randomized trial in 21 consecutive patients with angiographically demonstrated coronary artery disease using SPECT DP-Th vs SPECT DP-Tetro. Quantitative coronary angiography was employed to assess severity of vessel stenoses. A total number of 19 mild coronary artery stenoses (50–70%), 19 severe stenoses (71–99%) and 10 total occlusions was identified. SPECT DP-Th revealed a perfusion defect in 13 (68%) of 19 territories perfused by vessels with mild stenoses (10 were reversible). SPECT DP-Tetro identified 7 (37%) defects in the same 19 territories (3 were reversible; one sided T-test for reversible defects, p = 0.05; two-sided p = 0.1). DP-Th and DP-Tetro identified an equal number of defects in areas perfused by coronary arteries with severe stenoses or total occlusions (76% and 72%). *Conclusion:* Though only with a marginal statistical difference, SPECT DP-Th detects more reversible perfusion defects in mild coronary artery disease than DP-Tetro. The detection rate for defects in territories perfused by vessels with severe stenoses is similar.

1051 Pharmacotherapy of Atrial Fibrillation

Wednesday, March 19, 1997, 9:00 a.m.–11:00 a.m.
Anaheim Convention Center, Hall E
Presentation Hour: 9:00 a.m.–10:00 a.m.

1051-135 Efficacy and Safety of Intravenously Administered Dofetilide in the Acute Termination of Atrial Fibrillation and Flutter. A Multicenter, Randomized, Double-blind, and Placebo-controlled Trial

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The purpose was to assess the clinical efficacy and safety of intravenous (i.v.) dofetilide, a new selective potassium channel blocker, in acute termination of atrial fibrillation (AF) and flutter (AFl). Ninety-eight patients with AF/AFl of a duration from one hour to six months prior to screening were randomly allocated to receive a dose of dofetilide 8 μg/kg or placebo infused i.v. over a period of 30 minutes. Responders were defined as patients converting to sinus rhythm within three hours after the start of infusion.

Results: Sixty-seven patients received dofetilide and 31 received placebo. The two groups had comparable baseline characteristics. Nineteen (28.4%) patients receiving dofetilide and one (3.2%) patient receiving placebo responded to treatment (p = 0.005). Pre-study mean duration of AF/AFl was 68 ± 60 days for responders versus 75 ± 51 days for non-responders (p = 0.54). Two patients (3%) developed torsade de pointes ventricular tachycardia (TdPVT) in relation to dofetilide infusion. Prior to the occurrence of TdPVT, infusion of dofetilide was prematurely terminated due to gross distorsion of T-wave morphology. Both TdPVT-patients were successfully treated with magnesium chloride i.v.. The occurrence of proarrhythmia was not associated to dofetilide plasma concentration. No other cardiac or extra-cardiac side effects were noted.

Conclusions: Intravenous dofetilide 8 μg/kg over 30 minutes is effective in acute termination of AF/AFl. The incidence of proarrhythmia is comparable to what has been observed with other antiarrhythmic agents.